

Loopback Detection Configuration Commands

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Chapter 1 Loopback Detection Configuration Commands

Loopback Detection Configuration Commands include:

- loopback-detection
- loopback-detection enable
- loopback-detection vlan-control
- loopback-detection hello-time
- loopback-detection recovery-time
- loopback-detection control
- loopback-detection dest-mac
- loopback-detection existence
- show loopback-detection
- show loopback-detection interface

1.1 loopback-detection

Syntax

To enable global loopback detection, run the following command. To return to the default setting, use the no form of this command.

loopback-detection

[no] loopback-detection

Parameters

None

Default Value

Loopback detection is globally disabled by default.

Command Mode

Global configuration mode

Usage Guidelines

None

Example

```
Switch_config#loopback-detection
```

1.2 loopback-detection enable

Syntax

To enable loopback detection on a port, run the following command. To return to the default setting, use the no form of this command.

```
loopback-detection enable  
[no] loopback-detection enable
```

Parameters

None

Default Value

Loopback detection is disabled on a port by default.

Command Mode

Port configuration mode, ONU mode

Usage Guidelines

This command can be used to enable or disable loopback detection on a specified port. However, this settings takes effect only after loopback detection is enabled globally.
Note: Loop detection is invalid for PON interface.

Example

```
Switch_config#interface g0/1  
Switch_config_g0/1#loopback-detection enable
```

1.3 loopback-detection vlan-control

Syntax

To set a port to perform loopback detection toward a specified VLAN, run the following command. To return to the default setting, use the no form of this command.

loopback-detection vlan-control *vlan-list*

no loopback-detection vlan-control

Parameters

Parameters	Description
<i>vlan-list</i>	Stands for a VLAN specified by a port. It ranges from 1 to 4094, and up to 10 VLANs can be specified.

Default Value

None

Command Mode

Port configuration mode, ONU configuration mode

Usage Guidelines

After loopback detection is configured on a specified VLAN, the port transmits multiple detection packets of specified VLAN tag regularly and the number of these detection packets transmitted by this port can be up to 10.

Example

```
Switch_config#interface g0/1
Switch_config_g0/1#loopback-detection vlan-control 1-5
```

1.4 loopback-detection hello-time

Syntax

To set the transmission period of loopback detection packets, run the following command.

To return to the default setting, use the no form of this command.

loopback-detection hello-time *hello-time*

[no] loopback-detection hello-time *hello-time*

Parameters

Parameters	Description
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<i>hello-time</i>	Stands for the transmission period of loopback packets, whose unit is second. The value ranges from 3 to 65535.
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Default Value

3 seconds

Command Mode

Port configuration mode, ONU configuration mode

Usage Guidelines

None

Example

```
Switch_config# interface g0/1
Switch_config_g0/1# loopback-detection hello-time 200
```

1.5 loopback-detection recovery-time

Syntax

To set the recovery time of a port after being controlled, run the following command.

```
loopback-detection recovery-time recovery-time
[no] loopback-detection recovery-time recovery-time
```

Parameters

Parameters	Description
<i>recovery-time</i>	Stands for the recovery time of a port after being controlled, whose unit is second. The value ranges from 10 to 65535.

Default Value

10 seconds

Command Mode

Port configuration mode, ONU configuration mode

Usage Guidelines

None

Example

```
Switch_config# interface g0/1
Switch_config_g0/1# loopback-detection recovery-time 200
```

1.6 loopback-detection control

Syntax

To set a port to be controlled, run the following command. To return to the default setting, use the no form of this command.

```
loopback-detection control { block|learning|shutdown}
[no] loopback-detection control { block|learning|shutdown}
```

Parameters

Parameters	Description
<i>block</i>	Sets a port to be blocked.
<i>learning</i>	Sets a port to be learning.
<i>shutdown</i>	Sets a port to be shutdown.

Default Value

None

Command Mode

Port configuration mode, ONU configuration mode

Usage Guidelines

When a port detects loopback exists in its network, you can perform corresponding control actions to this port by setting control functions. The controlled states of a port include block, nolearn, shutdown and trap. When a controlled state is configured and loopback exists on a port, the trap message be transmitted. It is not configured by default.

After loopback detection is enabled globally, the port on which loopback detection is enabled transmits the loopback detection packets and receives the already transmitted loopback detection packets. Four control actions are conducted on the port:

block: This means to block the port. When loopback is found, this port will be isolated from other ports and the packets going into this port cannot be forwarded to other ports. This port is then in protocol down state and its MAC address table ages.

nolearn: This means forbidding this port to learn MAC addresses. Upon the discovery of loopback on a port, this port will not learn MAC addresses and at the same time age its MAC address table.

shutdown: It means to shut down the port. At the discovery of loopback, this port will not only transmit the trap message and age its MAC address but also shut down this port automatically to stop packet reception and transmission until the err-disable-recover time comes.

trap: It means that the port only reports alarms. When loopback is discovered, the port will only report alarms and age its MAC address table.

When a port is blocked, the packets entering into this port cannot be forwarded by this port and this port will go on transmitting loopback detection packets at the same time; when loopback disappears, the port will recover itself automatically. Loopback disappearance takes place if the port has not received loopback detection packets within 10 seconds. In block state the port protocol is down, while in shutdown state the port's link is down directly.

Example

```
Switch_config# interface g0/1
Switch_config_g0/1#loopback-detection control block
```

1.7 loopback-detection dest-mac

Syntax

To set the destination MAC address of loopback detection packets on a port, run the following command. To return to the default setting, use the no form of this command.

```
loopback-detection dest-mac mac-addr
[no] loopback-detection dest-mac mac-addr
```

Parameters

Parameters	Description
<i>mac-addr</i>	Stands for the MAC address that corresponds to a MAC VLAN entry.

Default Value

The default destination MAC address is 01-80-C2-00-00-0a.

Command Mode

Port configuration mode, ONU configuration mode

Usage Guidelines

None

Example

```
Switch_config#interface g0/1
Switch_config_g0/1#loopback-detection dest-mac 1111.1111.1111
```

1.8 loopback-detection existence

Syntax

To set a standard to judge whether loopback exists on a port when this port is enabled or its link state is UP, run the following command. To return to the default setting, use the no form of this command.

```
loopback-detection existence
[no] loopback-detection existence
```

Parameters

None

Default Value

Loopback is nonexistent by default.

Command Mode

Port configuration mode, ONU configuration mode

Usage Guidelines

This command is mainly used to solve the problem that loopback exists on a port or not when this port is up and its loopback detection function takes effect. When the controlled action of this port is set to shutdown, it is improper to regard that loopback exists on this port for a shutdown port has already not forwarded packets. There is no loopback by default.

Example

```
Switch_config# interface g0/1
Switch_config_g0/1# loopback-detection existence
```

1.9 loopback-detection frames-threshold

Syntax

To configure the threshold of the loopback detection frame received every minute, run the following command. To return to the default setting, use the no form of this command.

loopback-detection frames-threshold *num*
no loopback-detection frames-threshold

Parameters

Parameters	Description
<i>num</i>	Upper threshold <10-200>

Default Value

None

Command Mode

Interface configuration mode, ONU configuration mode

Usage Guidelines

The command can be used to configure the upper threshold of the loop detection frame on the specified port received every minute. The command takes effective only after the loop detection function is enabled globally.

Note: The loop detection is invalid for the PON port.

Example

```
Switch_config# interface g0/1
Switch_config_g0/1# loopback-detection frames-threshold 100
```

1.10 loopback-detection frames-monitor

Syntax

To configure whether to enable the frame monitor, run the following command.

[no] loopback-detection frames-monitor

Parameters

None

Default

None

Command Mode

Interface Configuration Mode, ONU Configuration Mode

Usage Guidelines

The command is used to enable the frame monitor function on the specified port. The command takes effective only after the loop detection function is enabled globally.

Note: The loop detection is invalid for the PON port.

Example

```
Switch_config# interface g0/1
Switch_config_g0/1# loopback-detection frames-monitor
```

1.11 show loopback-detection

Syntax

To display the configuration details of loopback detection, run the following command. To return to the default setting, use the no form of this command.

```
show loopback-detection
```

Parameters

None

Default Value

None

Command Mode

Other modes except the user mode

Usage Guidelines

This command is used to display the global or port's loopback detection configurations and port status.

Example

```
Switch#show loopback-detection
Loopback-detection is enable

Interface state information
Port      Status  dest MacAddress Control   VLAN
-----  -----
G0/1      UP     1234.5678.9abc BLOCK    1-5
G0/2      UP     0180.c200.000a WARNING
```

```

G0/3    UP  0180.c200.000a BLOCK
G0/4    UP  0180.c200.000a WARNING
G0/5    UP  0180.c200.000a WARNING
G0/6    UP  0180.c200.000a WARNING 1-8
G0/7    UP  0180.c200.000a WARNING
G0/8    UP  0180.c200.000a WARNING
G0/9    UP  0180.c200.000a WARNING
G0/10   UP  0180.c200.000a WARNING
G0/11   UP  0180.c200.000a WARNING
G0/12   UP  0180.c200.000a WARNING
G0/13   UP  0180.c200.000a WARNING
G0/14   UP  0180.c200.000a WARNING
G0/15   UP  0180.c200.000a WARNING
G0/16   UP  0180.c200.000a WARNING

```

1.12 show loopback-detection interface

Syntax

To show the information of loopback detection interface, run the following command:

show loopback-detection interface *intf-id*

Parameters

Parameter	Description
<i>Intf-id</i>	Show the set interface

Default Value

None

Command Mode

Other modes except the user mode

Usage Guidelines

The command is mainly used for displaying the information of the loopback detection status.

Example

```

Switch#show loopback-detection interface g0/1
Receive Packets :0
Transmit Packets: 20
Discard Packets:0
HelloTimeOut:10
RecoverTimeOut:26

```